**Week 3/Day 1 – 1**

**Introduction to Coordinate Geometry**

*This class will cover the format, directions, and question types that students should expect on the Coordinate Geometry section of the ACT. The main focus of this class is to practice Coordinate Geometry! The formulas and vocabulary used to understand Coordinate Geometry will be covered in detail. This section accounts for about 15% of the ACT Math test, so it is important that students understand the information presented here. There will be a great deal of student problem-solving practice and opportunity for any questions they may have The concepts outlined below will familiarize the student with the test and alleviate their anxiety about expectations during the class and on the test. The main concepts are slope and the distance and midpoint formulas, but the following will also be covered:*

1. *Number Line Graphs*
2. *Equation of a Line*
3. *Parallel and Perpendicular Lines*
4. *Translation and Reflection*

* **Materials:**
  + Whiteboard
  + Projector
  + PowerPoint slides (PPT) # 9*Coordinate Geometry* and # 10 *Lesson Plan for Midpoint and Distance Formulas*
  + Worksheet: Midpoint Formula Practice
  + ACT Math book
* **The student will:**
  + Understand the basic content of the ACT section on Coordinate Geometry
  + Begin to learn basic Coordinate Geometry vocabulary and formulas
  + Practice Coordinate Geometry (amounts for about 15% of ACT math)
* **Hour 1** – Introduction of Coordinate Geometry
  + 10 minutes – News clip to be summarized as a class (details in ‘Overview’)
  + 25 minutes – PPT #9Coordinate Geometry
    - Learn formula for probability
    - Apply to problems
  + 20 minutes – ACT Math book pgs. 68-71
    - Explain and discuss formulas and concepts
    - Discuss as a class to ensure understanding

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* **Hour 2** – Midpoint and Distance Formulas
  + 30 minutes—ACT Math book pgs. 87-89
    - Students should first work individually, then:
    - Have volunteers come to the board to work the problems
    - Have them show process not just the answer
    - Discuss as a class to ensure understanding
    - Reinforce formulas
  + 20 minutes – BREAK (according to prayer time)
  + 20 minutes—PPT #10 Midpoint and Distance Formulas
    - Go over important formulas
    - Practice on PPT
* **Hour 3** – Finding the Midpoint
  + 50 minutes – Worksheet: Midpoint Formula Practice as a class
    - Have volunteers come to the board to work the problems
    - Have them show process not just the answer
    - Discuss as a class to ensure understanding
    - Reinforce formulas
  + Summarize and give students expectations for next session (anything the need to work on at night, and what will be taught in the next session) (details in ‘Overview’)
    - Have students recap the sections and time-restraints of the ACT
    - Have students review pre-algebra formulas as a class